



**Figure 1: Deformed smaller fragment guide wire stuck in to dialysis catheter tip**

## Guidewire fragmentation complicating hemodialysis catheter insertion

Sir,

A 49-year-old (96 kg) female renal transplant recipient patient presented with the chronic graft rejection and imminent sepsis and was posted for hemodialysis. She was restless, had a short neck and had a platelet count of  $47 \times 10^3/\mu\text{l}$ . Two blind anatomical landmark attempts were under taken by the nephrologists in the right and left internal jugular veins (one on each side), but they were unable to pass the guidewire due to the difficult anatomy and patient's restlessness. The procedure was abandoned and intensivist assistance was sought. Under ultrasonography (USG) guidance, the femoral vein was localized and punctured and the guide wire used in the previous two attempts was passed in the vessel. The double lumen Hemo Dialysis Catheter (MAHURKAR™, Mansfield, USA) was railroaded over the guide wire into the vessel. During removal of the guide wire mild resistance was felt, but upon application of traction, the guide wire

could be pulled out. When aspiration of the port of HDC was carried out, it was found that the venous blood backflow was absent. The position of the HDC was again confirmed with USG and it was found to be inside the vessel. Finding no cause for absent flow, the HDC was removed under USG guidance. Upon removal, it was observed that a portion of the distal end of the guide wire was attached to the distal opening of the catheter [Figure 1] blocking it. Close examination of the guide wire revealed that the guide wire had fragmented cleanly in two pieces. A new HDC set was taken and the USG guided procedure was repeated and this time, the HDC could be placed uneventfully.

Though previous reports of the guide wire fracture have been attributed to faulty design (material weakness or fatigue)<sup>[1]</sup> or introducer needle injury,<sup>[2]</sup> in our case the two previous attempts of passing the guide wire may have injured and weakened its core as well as outer coil wire and during its forceful retrieval, it had got sheared off. However, the broken and deformed end had remained attached with the catheter thus, preventing disastrous complications such as embolism, perforation, sepsis, endocarditis, and cardiac arrest.<sup>[3]</sup> Smaller broken end lost its J shaped due to forward migration of the corewire. In this case guidewire (J tip) may have anchored into tributaries of the femoral vein leading to resistance during the retrieval. Intact guidewire is usually not damaged by relatively small traction during catheter insertion. Core and outer layer of the guide wire fragmented near the J tip in our case, which suggested of it's material weakness, fatigue or manufacturing defects. Through this correspondence, we would like to emphasize that whenever unusual resistance is encountered during the guide wire removal, application of force should be avoided. Both the guide wire as well as the catheter should be pulled out together to minimize the risk of the guide wire shearing off and migration. If USG or fluoroscopy is available stuck guidewire should be removed under radiological guidance.

**R. Haldar, S. Samanta<sup>1</sup>, S. Samanta<sup>2</sup>**

Departments of Anesthesiology, and <sup>1</sup>Critical Care Medicine, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, <sup>2</sup>Anesthesia and Intensive Care, Post Graduate Institute of Medical Education and Research, Chandigarh, India

**Address for correspondence:**

Dr. Sukhen Samanta,  
New PG Hostel, Room No. 218, Sanjay Gandhi Post Graduate Institute of  
Medical Sciences, Lucknow - 226 014, Uttar Pradesh, India.  
E-mail: dr.sukhensamanta@gmail.com

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